A Study of Changes in Facilitative Level and Cognitive Complexity Over the First Year of Graduate Education in Psychology

By

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By being a man incapable of surmounting his ignorance of himself and of destiny, perhaps I shall take sides for the beings different from the one I had invented.

What good will I be to them?

Paul Eluard

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Abstract of Dissertation Presented to the
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A STUDY OF CHANGES IN FACILITATIVE LEVEL AND COGNITIVE COMPLEXITY OVER THE FIRST YEAR OF GRADUATE EDUCATION IN PSYCHOLOGY

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The first-year graduate class in psychology at the University of Florida was studied at the beginning and at the end of the 1970-71 academic year. Soon after entering graduate school, each student participated in a procedure designed by Truax and Carkhuff for the measurement of interpersonal core conditions. They also completed two instruments for the measurement of personal constructs. The procedure was repeated at the end of the year.

A retest comparison group of first-year graduate students in engineering engaged in similar procedures, but without the seven-month time lapse between test and retest.

It was hypothesized that

1. The facilitative level for the psychology class would decline.

2. The facilitative scores of the psychology class would show more variability at the end of the year.

3. Cognitive complexity would decline.

4. Cognitive complexity would be related to facilitative level.

The results supported hypothesis 1 only for the dimension of empathy. Hypothesis 2 was not supported. Hypothesis 3 was fully supported. Hypothesis 4 was not supported.

The grid results were factor analysed. Implications of the study were discussed, and suggestions for further research were offered.

INTRODUCTION

The Training Programs

In an assault upon traditional selection and training programs for "helpers" (counselors and psychotherapists) Carkhuff (1970, 1968) concludes that these programs have failed to demonstrate the effectiveness of existing procedures. There is, at present, a modicum of research in support of his claim; as early as 1951, Kelly and Fiske made a comprehensive study of several hundred persons enrolled in, or seeking admission to, the V. A. training program in clinical psychology. One major difficulty inherent to the process of assessing clinical competence soon became apparent to the examiners. Classroom teachers and supervisors had widely divergent concepts of the criteria for success. The standards also differed among training institutions. While there was little agreement among the judges on the dimension of clinical competence, the intellectual aspects of success in graduate work could be predicted remarkably well. The usefulness of this finding is diminished by the lack of any evidence linking success in graduate training programs with the ability to be helpful with distressed people.

Indeed, the evidence suggests the reverse. Taft (1955) and Weiss (1963) have demonstrated that persons trained in a non-helping discipline (physical science) are highly accurate in understanding and diagnosing behavior, and become better with increasing information. The trained clinician, however, diagnoses the personality of others in inverse relationship to the actual measured characteristics. Furthermore, in a

well-known study, Bergin and Soloman (in Stollak and Guerney, 1966) found that post-internship students' ability to offer the therapeutic condition of empathy bore a slightly inverse relationship to both grade point average and practicum grade average. Later, Carkhuff, Piaget and Pierce (1967) found no relationship between the ability to offer good therapeutic conditions and grade point average. Carkhuff, Kratochvil and Friel (1968), in a pioneering exploration of the changes which occur over the first year of graduate training in clinical psychology, made the observation that the two students who offered the highest facilitative levels of empathy, genuineness and warmth, left the program before the year was over, and that among the six "dropouts" four were functioning at facilitative levels higher than most of those remaining in the program. The authors noted, however, that these "dropouts" had greater variability in their scores than the class as a whole, which led them to suggest that the extremes of good and poor helpers may be screened out, leaving "the great middle range" to carry on. In an unpublished study, cited by Carkhuff (1970), Holder studied first-year "dropouts" from clinical and non-clinical programs. He found that of the six highest-functioning trainees in the programs, five dropped out. Of the ten trainees functioning below the level necessary for minimal helpfulness, none dropped out.

The above evidence has suggested that graduate training programs may screen out the most promising candidates. But Carkhuff's attack on traditional training programs is supported by a second line of criticism; it has been suggested that these programs, once they have been denuded of all but "the great middle range", begin training this core away from whatever native facilitative abilities they do have. Although few traditional training programs have been investigated, two studies already

cited--Bergin and Soloman (1963) and Carkhuff, Kratchvil and Friel (1968)--have shown that trainees deteriorate in level of interpersonal helpfulness over the course of formal training. One study (Anthony and Carkhuff, 1969) had different results. With intermediate-level professional helper trainees--specifically, rehabilitation counselor students--there was a significant gain. However, the initial level of functioning of these students was very low, and their final level was still below the minimum deemed essential for helpfulness.

Facilitative Conditions

The validity of this criticism of contemporary training programs hinges on the assumption that there is an identifiable way of behaving with a distressed person by which he may come to feel better. Many of the studies cited have their theoretical roots in the formulations presented by Rogers (1957, 1959) who hypothesized the "necessary and sufficient" conditions for personal growth and constructive personality and behavior change.

> For therapy to occur it is necessary that these conditions exist:
>
> 1. That two persons are in contact.
> 2. That the first person, whom we shall call the client, is in a state of incongruence, being vulnerable or anxious.
> 3. That the second person, whom we shall term the therapist, is congruent in the relationship.
> 4. That the therapist is experiencing unconditional positive regard toward the client.
> 5. That the therapist is experiencing an emphathic understanding of the client's internal frame of reference.
> 6. That the client perceives, at least to a minimal degree, conditions 4 and 5, the unconditional positive regard of the therapist for him and the empathic understanding of the therapist.[1]

While Rogers is most closely identified with the formulation of these core therapeutic conditions, it has been pointed out (Truax and Carkhuff, 1966) that these conditions are merely a part of a broader array of therapeutic interpersonal skills which cut across theoretical schools. Truax and Carkhuff suggest that all theories of psychotherapy have emphasized the importance of the therapists' ability to provide a non-threatening, trusting, safe or secure atmosphere by his acceptance, non-possessive warmth, unconditional positive regard, or love. They add that virtually all theories infer that to be helpful the therapist must be accurately empathic, be 'with' the client, be understanding, or grasp the patient's meaning.

However, in elucidating the importance of the therapist's own attitudes, and in giving these status as the sine qua non of therapy, Rogers did bring us closer to a complete picture of the counseling dyad. The accumulating evidence that therapist attitudes and behaviors, such as those enumerated by Rogers and Truax, do indeed affect the outcome of the relationship, has been reviewed by Truax and Carkhuff (1966). Major studies which support this position include Bergin (1966); Solomon (1963); Cartwright and Lerner (1963); Rogers, Gendlin, Kiesler and Truax (1967); Halkides (1958); Combs and Soper (1963); Strupp, Wallach and Wogan (1964); Lorr and McNair (1966); and Truax, Wargo and Silber (1966).

The factors which Truax and Carkhuff empirically found to most accurately reflect this "therapeutic attitude" , reflected in the statements of Rogers, include accurate empathy, non-possessive warmth and genuineness. They explained (1966), however, that these factors alone were not sufficient conditions for psychotherapy. They expressed doubt

that all necessary and sufficient conditions could be identified (page 25). They explained that the "therapeutic attitude" which they described was meant to 1) reflect the underlying style of good interpersonal relationships, which all therapeutic schools have in common, and 2) account for the differences between successful and unsuccessful therapists, across all previous outcome studies.

Studies of the so-called core conditions have followed a characteristic pattern for identifying the degree to which each factor is present in any given interaction. Rating scales have been created by Truax and others (Truax and Carkhuff, 1966) in which nine incremental levels of each of these factors were delineated. Raters were trained in the description of the verbal behavior characteristic of each level and were taught to discriminate segments of psychotherapy tapes on the basis of these nine classifications. Most of the early studies (Truax and Carkhuff, 1966, page 45) report inter-rater reliabilities of .75 or higher, with more recent studies, using modified scales, reporting higher reliabilities (Carkhuff, 1970).

The primary core of facilitative conditions has been shown to account for between one-third and one-half of the variability on a variety of outcome indices (Truax and Carkhuff, 1966). In the search for the remaining variance not accounted for by the original three core conditions, other factors have emerged as perhaps equally important. In one study, Truax and Carkhuff (1964) found that concreteness was even more significant a variable than the other three factors. This finding, however, was qualified by a later study (in Carkhuff and Berenson, 1967), which reported that the concreteness must involve material of personal relevance to the client, and it is of value primarily in the early stages of therapy.

Also, a number of studies (reviewed in Truax and Carkhuff, 1966) show that the facilitative core of empathy, genuineness and warmth elicits related measures. Carkhuff (1970) suggested modifying the technique for the measurement of interpersonal effectiveness by the addition of new scales which might be more mutually independent, and might consequently account for more of the variance in psychotherapy than do empathy, genuineness and warmth. He postulated that in addition to the therapist's "motherly" role as an understanding and receptive facilitator, he also has a "fatherly" role as an action-orienter. The hypothesized action-oriented dimensions include self-disclosure (Carkhuff, 1968; Dickenson, 1965; Truax and Carkhuff, 1966; Martin and Carkhuff, 1965; and Carkhuff, 1970), confrontation (Anderson, Douds and Carkhuff, 1970; Carkhuff and Berenson, 1968; and Carkhuff, 1970), as well as several less frequently studied dimensions, such as immediacy of relationship, significant other, intensity, openness and flexibility, confidence and spontaneity, and commitment.

The Bergin Theory

It was reported above that research has indicated a deteriorative effect in the level of therapeutic helpfulness over the course of training in counseling anc clinical psychology (Bergin, 1966 and Solomon, 1963; Carkhuff, Kratochvil and Friel, 1968). However, a closer examination of these studies in light of the following evidence may alter their meaning; Allen E. Bergin, in Stollak, Guerney and Rothberg (1966), reacted to studies purporting to deny the usefulness of psychotherapy (Eysenck, 1960). He reviewed the recent literature and reexamined some older research reports, and concluded that psychotherapy may cause people to become either "better"

or "worse" on a variety of outcome indices than comparable people who do not receive such treatment. He reports that Rogers, Gendlin and Truax had each uncovered this phenomenon earlier, and that Barron and Leary, 1955; Cartwright and Vogel, 1960; and Cartwright, 1956 had noted this effect, but since the findings were incidental to their study, the observation never achieved the emphasis that it deserved. A number of studies have, upon reexamination, supported Bergin's conclusion (Fairweather, et al., 1960; Mink, 1959; Powers and Witmer, 1951; Rogers and Dymond, 1954). Bergin observed that in all of the studies which he reviewed,

> ...although there tends to be no difference in the average amount of change between experimentals and controls, there tends to be a significant difference in variability of change. The criterion, or change, scores for treatment groups attain a much wider dispersion than do those of control groups, even though the mean change in both groups is quite similar.[2]

Bergin attributes the differential effects of psychotherapy to variability among therapists.

In short, Bergin interpreted the "deterioration effect" observed in psychotherapy and concluded that, contrary to previous reports, psychotherapy does have a significant impact. However, some clients change for the better, some change for the worse, resulting in the cancellation of change scores for the group as a whole.

Truax and Carkhuff have shown that the facilitative change scores of therapists in training vis a vis their instructors, resemble the change patterns of clients vis a vis their therapists. Students, even in a single class, interact selectively with different professors and

different peers. Differing proportions of time may be spent with one or another faculty member as his assistant or advisee. Some elective courses will be taken, serving to further differentiate the experiences of the members of the class. Perhaps the same "for better and worse" effect occurs in the training of psychotherapists. This would necessarily alter the meaning of studies which report no change, or overall negative change, over the course of training. The occurrence of such an effect would have significant implications concerning such issues as the education of graduate students and the interrelationship between student variables and program variables. Knowing which students change, and how and why they change, might offer graduate departments a way of ascertaining how their educational goals are being met.

Some of the studies reporting a deteriorative effect in graduate helping programs support the hypothesis of increased variance over the course of training.

Carkhuff, Kratochvil and Friel (1968) took tape ratings of psychology students in two schools. In school A eight trainees were selected at random to represent each of the following groups: a) first-year clinical students during the first six weeks of graduate study, b) first-year non-clinical students, c) fourth-year clinical students and d) fourth-year non-clinical students. Each subject was cast as a helper in a counseling role, and tapes were made of the subsequent interviews. Raters judged the tapes by the usual method. In school B the same procedure was used with fourteen clinical students during the first six weeks of training. One year later, the same procedure was repeated with the eight students still remaining in the program.

The results revealed, firstly, a decline in facilitative level over the four years of training, with the greatest drop over the first year. Although the variance among second-year students in this study is actually non-significantly lower than among first-year students, the results may nonetheless support the hypothesis presented above; for 43 per cent of the class left the program before the second testing, and the "Drop" group had functioned at higher facilitative levels during the first testing than did the group that remained, suggesting the "Drops" were different from the "Stays" and would have consequently introduced more variance. Additionally, the variance among the "Drop" group itself is greater than among the "Stays." Had they been included in the testing at Time II, the results might have revealed an increase in the variance of the group as a whole. The "Drop" rate is apparently much higher in school B than in most clinical programs. Therefore, a more typical program might be expected to reveal a greater variance among second-year students, since more members of the most variable group--represented by the "Drops" in school B--would still be included in the subject pool at Time II.

A study by Berenson, Carkhuff and Myrus (1966) lends support to this interpretation. Volunteer undergraduates were randomly assigned to one of three "training groups": Group I, the training group, which received didactic and experiential training on the core therapeutic dimensions; Group II, which met for the same number of sessions but did not receive training; and Group III, which received only pre and post testing. Pre and post testing for each group consisted of tape recordings of interviews, interviewee reports, reports from significant others, and inventory self-reports. The primary findings are not of interest here.

Rather, in looking at the table of standard deviations for pre and post tape ratings for all experimental groups it is to be noted that each of the dimensions of empathy, positive regard, genuineness, concreteness and self-exploration, indeed, every post test group on every dimension reported, increased in variance. It seems to confirm the hypothesis that therapeutic training is "for better or worse."

Changes in the control group as well as the experimental group may reflect the fact that pre and post interviews, as well as meeting together in a non-structured way, serve as a form of training (albeit a less effective form--the control groups had significantly lower overall mean scores than the experimental group).

Cognition

The facilitative core conditions account for perhaps 30 to 50 per cent of the variability on change indices (Truax and Carkhuff, 1966). There are apparently a number of heretofore unidentified factors involved in therapeutic effectiveness. It has been suggested that part of the remaining variance may be accounted for by certain cognitive elements (Carkhuff, 1968).

Considering the cognitive nature of most graduate programs, it seems surprising that there have been so few efforts to assess the impact of graduate education on cognitive structure. One effort in this direction was reported by Dole, Nottingham and Wrightsman (1969). They explored beliefs about human nature held by counseling, clinical and rehabilitation students. They reported that on the Philosophies of Human Nature scales, students tended to have slightly favorable attitudes toward other persons and to endorse complexity. This last finding assumes increased significance

in that clinical students manifested more variability on the dimension of complexity than did any other group, despite lower variability by the clinical group on all the other PHN scales. Furthermore, the same study, in assessing attitudes of program directors, reports that 70 per cent of the clinical directors, compared with 43 per cent of the counseling directors and 31 per cent of the rehabilitation counseling directors, want their students to believe that human nature is complex.

Cognitive Complexity

The development of cognition consists of increased differentiation of elements as well as their integration into systems organized hierarchically. As Crockett (1965) points out, more developed, complex systems are characterized by a structure containing a relatively large number of elements, where these elements are integrated into hierarchic bonds of relationship.

One method by which cognitive complexity has been studied emerges from the work of George Kelly (1955). He constructed a psychological theory of human nature which places personal constructs in the keystone position. His basic theory is reducible to a fundamental postulate and eleven corollaries. The fundamental postualte is "A person's processes are psychologically channelized by the ways in which he anticipates events." The cognitively complex person theoretically has available more constructs in his anticipation of the behavior of others, can make finer discriminations, and can consequently develop a more versatile response repertoire. He has more structure in an informational sense, and may consequently be able to invoke more subtle structure in ambiguous situations, perceiving relationships which might not be noted by a less complex

person. The instrument characteristically used for studying cognitive complexity from the Kellian model has involved some form of a triadic grid, such as the Role Construct Repertory Test, devised by Kelly. In the RCRT, a set of role descriptions are provided to the subject. From this set triads are presented to him. He is asked to consider how any two are alike in some important way which sets them apart from the third. His responses form the constructs. Then he identifies all others in the set or role descriptions who fit this construct.

Bieri (1955) was the first to report using the grid to study complexity. He found that individuals were consistent in their degree of complexity, with a test-retest reliability of around 80. Furthermore, he found a significant positive relationship between cognitive complexity and the ability to accurately perceive differences between oneself and others. Also, he found a significant relationship between cognitive simplicity and the tendency to perceive unwarranted or inaccurate similarities between oneself and others. Leventhal (1957) explored the differential abilities of cognitively complex and simple judges to make predictions about tape recorded interviews with simple or complex subjects. He found a tendency for simple judges to be more accurate in predicting similarities, and for complex judges to be more accurate in predicting differences, although this tendency did not attain statistical significance. Using four complexity scales, Sechrest and Jackson (1961) found that complexity is significantly correlated with "social intelligence" based upon peer ratings.

Leslie Rothman (1970) touched the issue of complexity and training in psychotherapy. He found that cognitively complex therapists tended

to have an experiential, as opposed to an analytic orientation, and tended to have had a relatively greater number of interpersonal experiences in their lives than those who were more cognitively simple. In a study relating patterns of college teaching to the level of cognitive complexity of the teacher, Richard Reynolds (1970) found a significant relationship between various teaching styles and the cognitive complexity of the instructor. The implications of this study are that cognitively simple instructors utilize more lecture and drill. Their classes exhibit less student-initiated talk, but more teacher-directed talk, resulting in less overall silence than in the classes of more complex instructors. They provide for less acceptance or use of student ideas. However, Reynolds reports less "confusion" in the classes of these more simple instructors.

It follows from the theory that complex individuals are less likely to dichotomize mankind, less likely to see them as good versus bad. Campbell (1960) found support for this conclusion. High scorers were less likely to separate people into "good" or "bad." Scott (1963) asked subjects to sort nations into similar groups. Then they were asked to identify which nations they liked and which they disliked. Cognitively complex subjects sorted nations irrespective of the valence they attributed to them significantly more than simple subjects, suggesting less prejudicial behavior by the complex. Supnik (1964) explored the relationship between cognitive complexity and ambivalent descriptions of others and found that those high in complexity differed significantly from lows in that the former produced fewer univalent descriptions.

Adams-Webber (1970) found that complex subjects infer personal constructs of others more accurately than simple subjects.

Nidorf (1964) found that cognitively complex persons were more able to integrate contradictory information about people. Rosenkrantz (1961) confirmed the relationship between complexity and the integration of contradictory material, but only among male subjects. However, Leventhal and Singer (1964) reported results conflicting with Nidorf. Mayo and Crockett (1964) found that complex subjects were less influenced by recency effects. Fertig and Mayo (1970) reconfirmed that complex subjects were more able to integrate low and medium consistency material, but not highly consistent material.

In summary, the research suggests that cognitive complexity relates to the ability to see people as multi-faceted and to reserve judgment; the ability to attain a higher order of integration; the capacity to get along with other people; the ability to accurately perceive differences between oneself and others. It suggests the willingness to tolerate ambiguity and endure confusion; it is associated with an experiential orientation. These qualities involve dimensions similar to many of the dimensions measured in the scales for facilitative interpersonal relationships described above. The description of the highly complex person resembles the description of the facilitative therapist.

Summary

The following points have been raised thus far:

1. There have been criticisms of training methods in traditional graduate psychology programs. Present methods have not been shown to be effective in educating therapists and counselors.

2. A technique has been developed to identify certain dimensions of effective therapist behavior.

3. Students in psychology who have been examined by this technique have shown a deterioration effect over the course of their graduate education. Some issues have been raised concerning the interpretation of this data. It was hypothesized that the observed deterioration may represent an effect similar to that occurring in psychotherapy, where two groups emerge: a "change for better" group and a "change for worse" group, with an apparent net result of no change.

4. It was suggested that cognitive complexity may play an important role in therapeutic effectiveness. Research has shown that cognitively complex individuals differ from simpler people on a variety of personal and interpersonal dimensions. Complex individuals might be called more multi-faceted.

5. It has been suggested that cognitive complexity may be related to the facilitative core of good interpersonal relationships.

It is the purpose of this study to address itself to the issues presented above. The first-year graduate class in psychology at the University of Florida during the academic year 1970-71 is studied. Facilitative level and cognitive complexity are measured over the course of the year. The performance of the class on these measures and their changes over the year are presented and discussed. The following hypotheses are tested:

1. There will be a decline in the facilitative level of functioning of the class as a whole over the first year of graduate education in psychology.

2. There will be more variability in facilitative level among the first year class at the end of the year than at the beginning, suggesting that the program changes some people for the better, some for the worse.

3. Cognitive complexity scores will decline over the year for the class as a whole.

4. Cognitive complexity will be associated with facilitative interpersonal functioning.

NOTES

1. Carl Rogers, The necessary and sufficient conditions of therapeutic personality change. Journal of Consulting Psychology, 1957, 21, 96.

2. Bergin, Allen E. In Harry E. Stollak, Bernard G. Guerney, Jr. and Meyer Rothberg, Psychotherapy Research: Selected Readings Chicago: Rand McNally and Co., 1966, 118.

METHOD

Subjects

All entering members of the first-year graduate class in psychology at the University of Florida in September 1970, were asked to participate in the study. All were enrolled in a program leading to the Ph.D. degree. The first year program for these students consisted of a nine-month proseminar sequence, a statistics course, electives and individual work with some faculty member. All seventeen new members of the class agreed to cooperate in the study. The class was composed of nine females and eight males. Eleven were new in Florida. Thirteen of them expressed clinical interests.

Since the previous research (in Carkhuff, 1970) has suggested that the process of conducting an interview may serve as a form of interpersonal training and may raise the facilitative scores on subsequent interviews, and since complexity scores tend to decline somewhat upon retesting (Bannister and Mair, 1968), a comparison group was selected to test the alternative hypothesis that facilitative and complexity scores change as a result of retesting.

A group of first-year graduate students in engineering was used for this retest comparison. Phone calls were made to every fifth name on an alphabetical list of all beginning graduate students in engineering. Most were reluctant to participate, and it became necessary to offer the students two dollars for their participation. In this manner, fifteen "volunteers" were secured.

Out of the original groups of seventeen experimental subjects and fifteen comparison subjects, fourteen psychology students (nine female, five male) and fourteen Engineering students (twelve male, two female) were able to complete both parts of the study.

Procedures

Shortly after the beginning of classes in September, the experimental subjects were asked to participate in the study. It was explained to the potential subjects that the author was exploring changes in students over the first year of graduate study.

The first part of the experimental procedure consisted of a half-hour tape recorded interview with the experimenter in which biographical material was elicited. One of the purposes of this procedure was to establish rapport so that the subjects would be more comfortable about participating in the rest of the study, and less wary that their participation might somehow affect their standing in the department. Immediately after this interview two personal construct grids were administered (see Measurement).

Then, at a later date, but within the first eight weeks of residence, the members of the class each conducted a clinical interview. These interviews followed the ensuing format. To secure confederates, twelve volunteers taking an upper division course in the psychology of personality were interviewed by the author. Those students unwilling to provide the necessary time or abide by the experimental conditions were eliminated. Students who, in the estimation of the author, manifested significant interpersonal or communicative difficulties were also eliminated.

The nature and purpose of the study were explained fully to the five students remaining as confederates. They were instructed to act as

though they were naive subjects enrolled in an experimental psychology course who had signed up for participation in this experiment in order to fulfill a course requirement. They were to present themselves to the subjects as though this were the only interview of this nature that they had participated in. They were instructed to discuss any real, current, personally relevant problem with the subjects.

Each subject was given a one-half hour appointment, for which they were told beforehand that they would be conducting an interview with an undergraduate. When they arrived they received the following instructions from the examiner:

> "This is _____. He/she is an undergraduate who is participating in this experiment to fulfill course requirements for experimental participation. I would like you to spend the next half-hour getting to know him/her as best you can in such a short time. I would like you to try to be as helpful to him/her as you can be, whatever helpful means to you. I will sit quietly in the back of the room and let you know when your time is up."

They were then asked if they had any questions. When anyone asked a question bearing on the nature of the study, they were told that questions could not be answered until the end of the year, after the completion of the study. Then the tape recorder was turned on, and the experimenter retired to an inconspicuous corner of the room where he was out of the subject's sight. The experimenter remained in the room to reduce the potential risks for the participants. After thirty minutes the experimenter terminated the session.

This entire process, excluding the initial interview with the experimenter, was repeated again at the end of the academic year, during the spring quarter, approximately seven months after the first testing. At this time, each subject was assigned to a different undergraduate interviewee.

The comparison group received the same experimental treatment in the conduct of the interviews as the psychology students. However, for the comparison group, the second testing took place seven weeks after the first. This group also completed one of the two personal construct grids which were administered to the experimental subjects (see Measurement).

Measurement

To secure measures of cognitive complexity, two personal construct grids were employed. The first was a standard Bieri grid (see Appendix B), in which the procedures established by Bieri were followed:

> Each judge is presented with a 10 x 10 grid. Each of the ten columns is identified by a different role type selected to be representative of the meaningful persons in the judge's social environment. The ten rows of bipolar constructs which are provided were selected on the basis of being representative of the dimensions elicited from college-trained subjects. After the judge has listed the name or initials of each of the ten persons who best correspond to the ten role types, he is instructed to use a six-step Likert-type scale in rating all ten persons he has listed on the first provided construct. For example the first construct dimension is "outgoing-shy." Each judge rates each of the ten persons on a scale of +3 (outgoing) to -3 (shy). Following this, the judge rates all ten persons on the second construct dimension and so on through all ten rows. Thus each subject makes ten ratings for each of the role types, for a total of 100 ratings.[1]

The second personal construct grid was one developed specifically for this study (see Appendix B). It was an adaptation of the Bieri grid, with quotations from various psychological theorists used in place of role descriptions. Also, one role description was the category "yourself." In completing the grid, students were asked to consider everything they knew about the particular theorist (see Appendix B). The quotations,

it was explained, were meant only to provide some common knowledge among those taking the test. This grid was completed following the same protocol as the Bieri.

A number of different measures from the factor analysis of Kelly's grid have been used for gauging cognitive complexity. The "explanatory power of the first construct factor" has sometimes been used (Jaspers, 1963). This is defined as the sum total of all matches between the hypothetical row which describes the first factor point and all rows (constructs) which are loaded significantly on this factor. The Test for Random Information (J. V. Kelly, 1964) is another frequently used complexity measure. It represents the number of significant relationships between rows on the grid. Adams-Webber (1970) has demonstrated the relative equivalence of the various complexity measures. Both the explanatory power of the first factor and the test for random information were used as complexity measures in this study.

Facilitative level was measured in the following way. The interview tapes were randomly ordered, and three one minute segments from each were copied on a master reel. One segment from each tape was taken from the fifth, one from the fifteenth, and one from the twenty-fifth minute.

Subsequently, thirty sophomores enrolled in an introductory psychology course signed up for experimental credit in a project labelled "Empathy Rating." They did this to fulfill a course requirement for experimental participation. The sophomores were divided into three groups of ten, and each group was trained by the experimenter in the discrimination of one of three core conditions. For this study three representative core dimensions were selected: one facilitative dimension (empathy), one action-oriented dimension (self-disclosure) and an additional dimension

(concreteness) which some research has suggested might hold more value than any other (see Introduction).

Carkhuff's (1970) nine-point scales (see Appendix) and training procedures were used, along with excerpts from the dialogs on Truax's training tapes. Training for each group consisted of three parts. The first was a one-and-one-half hour lecture-discussion on the particular facilitative condition assigned to that group. During the latter part of that session, training segments were presented, evaluated and discussed by the prospective judges. This session continued until the judges had attained a high level of mutual agreement and differed by no more than one-half point on their ratings of training tape segments. For the second part of their training, the raters were given copies of Carkhuff's scales along with some training examples, and instructed to take them home and study them over the week. They were told that before rating the experimental tapes, they would be tested on their knowledge of the scales, and that experimental credit would be contingent upon their knowledge of these scales.

The rating session was scheduled for one week later. Six of the judges did not show up for this session, leaving nine raters in the empathy group, nine in the concreteness group, and six in the disclosure group. First the scales were reviewed and a few sample tapes were played. Then the edited 168 tape segments were played. Each judge rated each segment. With several short rest periods, the rating took approximately three-and-one-half hours for each group to complete. Inter-rater reliability figures are presented below.

NOTES

1. J. Bieri, A. L. Atkins, S. Briar, R. L. Leaman, H. Miller and T. Tripodi. Clinical and Social Judgment: The Discrimination of Behavioral Information New York: John Wiley and Sons, Inc., 1966, 191.

RESULTS

Inter-Rater Reliabilities

Multiple correlation coefficients, by which one r is derived for each rater in each group, were calculated to determine inter-rater reliability. The correlations were high in all three groups. They ranged from .83 to .93. These results are presented in Table I.

TABLE I

Multiple Correlation Coefficients and Coefficients of Determination Among Raters in Each Rating Group

	Emp		Con		Dis	
Rater	r	r^2	r	r^2	r	r^2
1	.86	.74	.87	.75	.91	.83
2	.84	.70	.91	.83	.91	.82
3	.91	.82	.90	.81	.92	.86
4	.90	.82	.90	.80	.87	.75
5	.89	.79	.89	.80	.88	.77
6	.86	.75	.88	.78	.92	.84
7	.90	.82	.89	.79	-	-
8	.92	.85	.93	.86	-	-
9	.91	.84	.91	.82	-	-

These results demonstrate an agreement of between 60 to 80 per cent among raters. The correlations are comparable in magnitude to those reported by Truax and Carkhuff. Table I is the product of multiple correlation, which does more to maximize the r than does the simple averaging technique employed in most of the results reported by Truax.

All three groups had about equally high inter-rater reliabilities, suggesting equal capacity to discriminate each facilitative quality.

Facilitative Ratings

Table II presents means and standard deviations for facilitative levels of the experimental group, with t-tests for pre-post differences.

TABLE II

Means and Standard Deviations of Facilitative Ratings for Experimental Subjects with t-tests for Pre-Post Differences

Condition	Time I		Time II		t	p
	$\bar{X}$	SD	$\bar{X}$	SD		
Empathy	3.37	1.91	1.95	1.52	3.13	.01
Concreteness	3.09	1.44	3.20	1.57	1.02	NS
Disclosure	2.87	1.31	2.60	1.25	.72	NS

The hypothesis of a decline among the experimental subjects in facilitative level over the course of the year was supported only for the dimension of empathy. They dropped from 3.37 initially, which is above the 3.0 "minimally facilitative level" described by Truax, to a low of 1.95 at the end of the year.

For the dimension of concreteness the direction of change over the year was opposite to the prediction, but the change was not significant. For self-disclosure, the results were in the predicted direction, but were also non-significant.

The comparison group did not change significantly on any of these dimensions between testings. Means and standard deviations for facilitative levels of the comparison group, with t-tests for pre-post differences are presented in Table III.

TABLE III

Means and Standard Deviations of Facilitative Ratings for Comparison Subjects with t-tests for Pre-Post Differences

Condition	Time I $\bar{X}$	Time I SD	Time II $\bar{X}$	Time II SD	t	p
Empathy	1.96	0.75	2.07	0.76	0.16	NS
Concreteness	3.20	1.44	3.34	1.55	0.35	NS
Disclosure	2.52	1.18	2.32	1.09	0.50	NS

The results of t-tests between experimental and comparison groups are presented in Table IV. Only on the dimension of empathy at time I did the experimental and comparison groups differ significantly ($p < .01$).

TABLE IV

t-tests for Differences in Facilitative Scores Between Psychology Students and Engineering Students

	Empathy	Concreteness	Disclosure
Time I	3.64*	.29	.88
Time II	.28	.33	.72

*Significant at $p < .01$

The prediction of increasing variability among the members of the psychology class over the course of the year, as reflected by increased variance, did not materialize. The results, in fact, were opposite to the predicted direction on the dimension of empathy and self-disclosure (see standard deviations in Table II).

Two-way analysis of variance for groups combining time and time combining groups, presented in Table V, shows the following. For both the dimensions of empathy and self-disclosure, the experimental group, with pre and post measures combined, were significantly different from the comparison group ($p < .01$), while the experimental and comparison groups combined at Time I differed significantly from the combined score of these groups at Time II. On the dimension of concreteness, no significance appeared.

TABLE V

F-tests for Differences Between Groups Combining Time and Time Combining Groups on All Facilitative Dimensions

Source	Empathy	Concreteness	Disclosure
E vs. C	109.54*	1.65	23.40*
Pre vs. Post	112.64*	1.65	13.28*

*Significant at $p < .01$

Reliability of the Bieri Grids

The cognitive complexity scores on the Bieri grids, calculated as described above, were correlated between testings. The complexity scores for the experimental group at Time I and the experimental group at Time II yielded a Pearson r of .77, which is significant at $p < .01$. Time I and Time II measures for the comparison group correlated .88, which is significant at $p < .001$. Apparently, the test is significantly reliable among this population even after such a length of time. Predictably, the comparison group complexity scores yielded the higher r after its shorter retest period.

Factor Analysis

The Theorist grids were subjected to a non-parametric factor analysis using the method and program designed by Joseph Kelly. The centers of cluster, first and second factor constellations, total first factor matches and test for random information scores from the factor analysis of the Theorist grids are presented in Appendix D. All X's in any given row represent that column as a component of the factor or cluster for that subject.

Interpretation of Factors and Centers of Cluster

The following speculative discussion is a descriptive treatment of the results from the factor analysis of the Theorist grids. The observations are tentative. They do not represent statistical inference at any known level of probability.

Centers of cluster

Kelly describes the meaning of the factor and the center of cluster in the following way:

> "...think of the grid as representing a series of points in space. Now consider the situation if these points bunch themselves into two distinct groups or clusters. As the experimenter, you would want a factor to describe a point at the center of each cluster. In addition, you might want another factor to tell you where to find the center of the cluster that is made up of all the points in the system. For instance, if someone asked you to describe the politics of congressmen, you might say that some are Democrats and some are Republicans, but, in general, they are politicians. A good program, then, should be able to find the 'Democrats' and 'Republicans' as well as the 'politicians'."[1]

Kelly goes on to explain that the Center of Cluster in this analogy represents the "politicians" while the first factor represents the most concentrated group of points in the system, let us say the "Democrats."

The second factor, likewise, represents the second most concentrated group of points in the system. From the results reported in the Appendices, it seems that early in the year, there was more of a tendency for Maslow, Whitaker, Perls and Ellis to occupy the construct system of the class. At the end of the year, however, this seems to have changed to Maslow and Rogers, with Whitaker dropping from centrality. The cognitive map of the class seems least frequently to include Adler, Sullivan and Reich upon entering graduate school. By the end of the year, however, Adler and Sullivan have increased somewhat in importance, while Wolpe has joined Reich in being least frequently a part of the center of cluster. Ellis also moved from centrality over the year. It may be of value to note that Wolpe, Ellis and Reich would have been likely to receive little exposure before the class through the proseminar sequence, and this might account in part for their drop from centrality.

Among the clusters themselves, it is interesting to note (see Appendix C) how frequently Maslow and Whitaker appear in the same factor, and how frequently Rogers and "yourself" are paired. "Yourself" rarely appears clustered with Ellis, Wolpe or Freud. Associations to the word "yourself" appear less strong, however. Yet there still appears a tendency at Time II to pair oneself with Rogers, Perls and Maslow.

First factor

Among first factor theorists (see Appendix C) at Time I Maslow and Whitaker seem to occupy the most cognitive space among the members of the class. Here also, there appears to be a tendency for the category "yourself" to be part of the same factor as Rogers. Ellis, Adler and Jung are least frequently a part of the first factor. Jung is often

paired with Freud and Adler, showing, at least, a certain degree of logical consistency in the thinking of the students. At Time II, Maslow continues to frequently appear in the first factor; but here, Perls and "yourself" are also frequently represented. It is noteworthy that Ellis has moved from being the least frequent component of the first factor at Time I to being one of the most frequent at Time II. At Time II Wolpe, Reich and Sullivan have joined Adler and Jung as being least frequent components of the primary constellation.

The most cognitively complex students tended to form a factor which includes Whitaker, Ellis and Rogers among its members. This seems somewhat paradoxical, since these theorists are not regarded as the most "complex" of those represented on the grid.

Second factor

Constellations similar to those in the first factor appear among second factor theorists. Maslow, Whitaker, Perls, Ellis, Adler and Rogers are most frequent at Time I while Maslow, Ellis, Rogers and Perls are cited most at Time II. There is much less diversity in the frequency of selection of second factor theorists. They are all selected in about equal proportion, both at Time I and Time II.

Relationship of Bieri and Theorist Complexity Measures

To determine whether the Bieri grid and Therapist grid yield related measures, the complexity scores for each subject on the Bieri were correlated with the complexity measures derived from the factor analysis of the Theorist grid (FFM and TRI scores). The Bieri scores from Time I and FFM scores at Time I yield a Pearson r of .73, which is significant at $p < .001$. The Bieri at Time I and TRI scores at Time I correlated .82

(significant at $p < .001$). The Bieri scores at Time II correlated .65 with FFM ($p < .01$) and .76 with TRI ($p < .001$). The Bieri and Therapist grids appear to yield complexity scores which are significantly related.

Correlation Between Complexity and Facilitative Level

The mean scores for empathy, concreteness and disclosure across all raters for each subject, both pre and post, were calculated. Using the Pearson r, each of these was correlated with the Bieri complexity scores. For the experimental subjects, these were also correlated with the Theorist complexity scores.

Correlation coefficients between complexity scores and mean facilitative scores for each subject on each dimension are presented in Table VI.

TABLE VI

Correlations Between Complexity Scores and Mean Facilitative Scores

	Emp		Con		Dis	
Grid	pre	post	pre	post	pre	post
Theorist						
FFM	.44[b]	.14[b]	.30	.42	.42	-.14
TRI	.26	.47[b]	.23	.09	.33	.24
Bieri						
exp	.36	.29[b]	.18	-.06	.09	.39
com	.55[a]	.48[b]	.11	.38	.24	.40

a Significant at p .05
b Significant at p .10

The only one of these scores to reach significance at $p < .05$ was the first testing of the comparison group on the dimension of empathy. Three others--the first testing of the experimental on the dimension of empathy correlated with FFM, the second testing of the experimental

group on the dimension of empathy correlated with TRI, and the second testing of the comparison group on the dimension of empathy--were significant at $p < .1$.

The hypothesis of a direct relationship between mean scores on facilitative dimensions and cognitive complexity was confirmed only in the case of the first testing of the comparison group on the dimension of empathy.

Changes in Complexity

T-tests were run between pre and post complexity scores on the Bieri for both groups, and on the Theorist scores for the experimental group. T-tests between initial and final complexity measures are presented in Table VII.

TABLE VII

t-tests for Differences Between Pre and Post Complexity Scores

	Bieri	FFM	TRI
Experimental	2.015*	2.334*	2.277*
Comparison	1.023NS	--	--

*Significant at $p < .05$

The Bieri complexity scores for the experimental group as well as the TRI and FFM scores on the Theorist grid, all showed a decline significant at $p < .05$ over the course of the year. The t-test for the comparison Bieri grid was not significant. The hypothesis of a decline in cognitive complexity among psychology students over the first year of graduate training was supported on each of the three separate complexity measures used in this study.

NOTES

1. Joseph Kelly, Instruction Manual for IBM 1620 Program to Process George Kelly's REP Grid, Version II, 47.

DISCUSSION

Decline in Empathy

The hypothesis that the first-year class in psychology would decline on the dimension of empathy, concreteness and self-disclosure over the year was supported only for the dimension of empathy. It seems that the psychology program has its strongest effect on this dimension. To gain a more complete understanding of the present findings, they must be seen in the context of research programs aimed at exploring the role of empathy in education (Truax and Carkhuff, 1966; Aspy, 1969). Currently unanswered questions which might bear upon the interpretation of the present results are many. For example, is the effect of the first year reversed in subsequent years? Does the rigorous and competitive nature of the first-year program provide learning experiences which ultimately lead to higher levels of empathy than would be possible without such a program? Are there other values such as academic or research proficiency which ought to receive higher priority than facilitative helpfulness?

The purpose of this study is to explore the effect of the first year as a graduate student in psychology on the subjects' facilitative levels and cognitive complexity scores. No single aspect of the subjects' environment can be identified as the sole agent responsible for the changes which were observed. The formal program offered by the department of psychology, the academic environment, the personal and social experiences of the subjects, their relationship with the local community and other

aspects of their current life situation all interact to influence the subjects' test scores. It is the interrelationship of all of the subjects' experiences which produce changes in their scores.

To help clarify the meaning of the present findings, an intellectually comparable comparison group was employed using a test-retest procedure. The purpose of the comparison group of first year graduate students in engineering was to explore whether participation in the experimental interview itself might alter the facilitative level upon retesting. Table III demonstrates that this effect did not occur. It may be concluded that the test and retest procedure in itself does not account for the decline among the experimental subjects. Since the time interval between test and retest was greater among the experimental group than among the comparison subjects, one would expect the effect of retesting to be even less among the experimental subjects.

In view of the greater time lapse between test and retest for the experimental subjects, the comparison group data cannot rule out the effect of time alone on test and retest scores. One might ask whether facilitative level declines as a function of time, irrespective of the experiences of the experimental subjects. A number of other studies have demonstrated that time alone does not explain changes in facilitative level. Carkhuff, Piaget and Pierce (1968) have, in fact, shown a significant increase in facilitative level among a group of lower division University students, and among seniors. Also, Anthony and Carkhuff (1970) have demonstrated that time spent in a graduate program in the helping professions cannot in itself account for a decline in empathy. They found that graduate students in rehabilitation counseling increased significantly in their facilitative interpersonal scores from the first

to the fourth semester. These results suggest that a year of graduate study per se does not necessarily lower retest scores for empathy. The fact that graduate students in rehabilitation counseling were found to function at a higher level after three semesters suggests that graduate training in applied behavioral science does not in itself depress empathy scores.

Variability

Although the hypothesis of increased variability among members of the class failed to materialize, the experimental group manifested more variability than the comparison group on the dimensions of empathy and self-disclosure.

The failure to support the extension of Bergin's theory of "change for better or worse" to this class may suggest that the members of the class are subjected to more uniform experiences over the year than had been anticipated in this study. It is possible, though, that the implications of Bergin's theory may still apply in the second and subsequent years of training, as the students' programs and experiences become more individuated. It would therefore seem worthwhile to follow up this study in the second and subsequent years. If students' individual programs will differentially affect their facilitative scores, it might ultimately be possible to identify the differences between the experiences of students who become more facilitative and those who become less so.

Complexity and Facilitative Level

It was hypothesized that there would be a positive relationship between facilitative levels of individuals and their complexity scores on the Bieri and Theorist grids. The relationship was significant only among the first testing of the comparison group on the dimension of

empathy. Although the other correlations were mostly positive, the hypothesized relationship did not appear.

The lack of support for this hypothesis, however, may provide even stronger evidence that a change did occur among the experimental subjects. Since the present findings do not provide reason to believe that facilitative scores and complexity are related measures, the observed decline in both complexity and empathy may be considered to reflect two separate indices of change. This is stronger than a decline on two related measures would have been.

Decline in Complexity

The most fully substantiated hypothesis was that cognitive complexity would decline over the year among the psychology students. The group declined significantly on both the Bieri grid complexity measure and on the Theorist grid measures. The students in psychology tend to simplify their constructs over the year. As a group, they are generally less complex in their ways of construing people after seven months in the program. This would suggest an increased tendency to categorize, to perceive an individual as a member of a class or as a type.

The results do not indicate whether this effect will remain during the additional years of professional education. But if the cognitive complexity scores of the class do, in fact, reflect such characteristics as increased tendency to simplify, it would seem important to assess what aspects of the first year of graduate study encourage this tendency.

It is necessary to note that the decline in complexity on the Theorist grid may not have the same meaning as the decline on the Bieri grid. The high complexity scores at the beginning of the year on the

Theorist measure may be partly a reflection of the entering students' unfamiliarity with the theorists who constituted the grid items. The students may be complex in creating constructs about these theorists because they lack experience with systems and theories. As they acquire such experience over the year, they may appear more cognitively simple as they begin to sort the theorists into more appropirate groupings. Such an interpretation, however, cannot explain the decline on the Bieri grid so easily.

In interpreting the results of either grid, it must be considered that previous research has shown that readministration of the Bieri results in somewhat more simplistic responses during the retest. Persons who have previously taken the grid may arrange the material better, resulting in a "tightening effect" (Bannister and Mair, 1968). This effect in itself is not sufficient to explain the significant decline in complexity observed among the members of this class. The experimental subjects, with seven months between testings, declined significantly on all complexity dimensions, while the comparison retest group with seven weeks between testings declined insignificantly. One would expect the "tightening effect" to be strongest with a shorter interval between test and retest. It seems then that other factors must contribute to the observed decline among experimental subjects.

Conclusions

This study has shown that the experimental subjects decline in both empathy and cognitive complexity over their first year of graduate study. There are several areas which need further exploration for the full meaning of the present findings to be made clear.

The first of these relates to the specificity of the observed effect. This would include such questions as "Are the observed changes specific to the psychology program or are they university-wide phenomena?" "Do other schools throughout the country have a similar effect or are the results provincial?" and "Was this year's class typical of all first-year students or would the observed effect fail to occur in other years?" The procedure for the comparison group in this study was designed to explore the alternative hypothesis that the experimental situation itself affects performance. It does not exclude the possibility that a year in graduate school per se or that time alone might account for the present results. With the limitations of the present study one cannot know whether there is any department that does not decline on the studied dimensions. For these reasons, administering the experimental procedures to students in other departments and at other institutions would help to expand the interpretation of the present results.

A second area in which the present findings leave many open questions is causality. If the question "Who changes and who does not?" could be satisfactorily answered, one would then want to identify the specific antecedents to the observed changes. The search for environmental, experiential and personality factors necessary and sufficient for change might begin with phenomenological observations and comparisons of individual subjects who do and who do not change.

A third area which has not been explored in this study is the possible value of changes along the studied dimensions of empathy and cognitive complexity for the subjects themselves. Evidence has been accumulating that declines on these dimensions are not conducive to interpersonal effectiveness. However, one could hypothesize an immediate usefulness

for low empathy among graduate students. From this point of view it might be maintained that the results of this study are artifacts of anxiety associated with graduate study. Perhaps increased pressures effect a temporary emotional withdrawal which would be consistent with declining empathy. Such an interpretation might lead to the speculation that lower empathy among the subjects may be desirable, since as a sign of higher anxiety it might indicate greater motivation to perform well in graduate school. This argument would carry the present findings into the controversy surrounding the relationship between motivation and performance. Some researchers (see Malmo, 1957) have postulated an inverted U-shaped function as describing this relationship. If such an interpretation is valid it would suggest that anxiety is usefully related to performance only up to a certain point. Others have maintained that the function is linear (see review by Spence and Spence, 1966).

With the present obscurity surrounding this issue it does not seem likely that questions concerning the possible immediate value of declining empathy for the subjects themselves could be resolved at this point.

SUMMARY

The first year graduate class in psychology at the University of Florida was studied at the beginning and at the end of the 1970-71 academic year. Soon after entering graduate school, each student participated in a procedure designed by Truax and Carkhuff for the measurement of interpersonal core conditions. They also completed two instruments for the measurement of personal constructs. The procedure was repeated at the end of the year.

A retest comparison group of first year graduate students in engineering engaged in similar procedures, but without the seven-month time lapse between test and retest.

It was hypothesized that

1. The facilitative level for the psychology class would decline.

2. The facilitative scores of the psychology class would show more variability at the end of the year.

3. Cognitive complexity would decline.

4. Cognitive complexity would be related to facilitative level.

The results supported hypothesis 1 only for the dimension of empathy. Hypothesis 2 was not supported. Hypothesis 3 was fully supported. Hypothesis 4 was not supported.

The grid results were factor analysed. Implications of the study were discussed, and suggestions for further research were offered.

APPENDICES

APPENDIX A

Scales for Assessment of
Interpersonal Functioning

Empathic Understanding in Interpersonal Processes:
A Scale for Measurement

Level 1

The verbal and behavioral expressions of the first person either do not attend to or detract significantly from the verbal and behavioral expressions of the second person(s) in that they communicate significantly less of the second person's feelings than the second person has communicated himself.

Examples.--The first person communicates no awareness of even the most obvious, expressed surface feelings of the second person. The first person may be bored or uninterested or simply operating from a preconceived frame of reference which totally excludes that of the other person(s).

In summary, the first person does everything but express that he is listening, understanding, or being sensitive to even the feelings of the other person in such a way as to detract significantly from the communications of the second person.

Level 2

While the first person responds to the expressed feelings of the second person(s), he does so in such a way that he subtracts noticeable affect from the communications of the second person.

Examples.--The first person may communicate some awareness of obvious surface feelings of the second person, but his communications

drain off a level of the affect and distort the level of meaning. The first person may communicate his own ideas of what may be going on, but these are not congruent with the expressions of the second person.

In summary, the first person tends to respond to other than what the second person is expressing or indicating.

Level 3

The expressions of the first person in response to the expressed feelings of the second person(s) are essentially interchangeable with those of the second person in that they express essentially the same affect and meaning.

Example.--The first person responds with accurate understanding of the surface feelings of the second person but may not respond to or may misinterpret the deeper feelings.

In summary, the first person is responding so as to neither subtract from nor add to the expressions of the second person; but he does not respond accurately to how that person really feels beneath the surface feelings. Level 3 constitutes the minimal level of facilitative interpersonal functioning.

Level 4

The responses of the first person add noticeably to the expressions of the second person(s) in such a way as to express feelings a level deeper than the second person was able to express himself.

Example.--The facilitator communicates his understanding of the expressions of the second person at a level deeper than they were expressed, and thus enables the second person to experience and/or express feelings he was unable to express previously.

In summary, the facilitator's responses add deeper feeling and meaning to the expressions of the second person.

Level 5

The first person's responses add significantly to the feeling and meaning of the expressions of the second person(s) in such a way as to (1) accurately express feelings levels below what the person himself was able to express or (2) in the event of ongoing deep self-exploration on the second person's part, to be fully with him in his deepest moments.

Examples.--The facilitator responds with accuracy to all of the person's deeper as well as surface feelings. He is "together" with the second person or "tuned in" on his wave length. The facilitator and the other person might proceed together to explore previously unexplored areas of human existence.

In summary, the facilitator is responding with a full awareness of who the other person is and a comprehensive and accurate empathic understanding of his deepest feelings.

Facilitative Self-Disclosure in Interpersonal Processes: Scale for Measurement

Level 1

The first person actively attempts to remain detached from the second person(s) and discloses nothing about his own feelings or personality to the second person(s), or if he does disclose himself, he does so in a way that is not tuned to the second person's general progress.

Example.--The first person may attempt, whether awkwardly orskillfully, to divert the second person's attention from focusing upon personal questions concerning the first person, or his self-disclosures

may be ego-shattering for the second person(s) and may ultimately cause him to lose faith in the first person.

In summary, the first person actively attempts to remain ambiguous and an unknown quantity to the second person(s), or if he is self-disclosing, he does so solely out of his own needs and is oblivious to the needs of the second person(s).

Level 2

The first person, while not always appearing actively to avoid self-disclosures, never volunteers personal information about himself.

Example.--The first person may respond briefly to direct questions from the client about himself; however, he does so hesitantly and never provides more information about himself than the second person(s) specifically requests.

In summary, the second person(s) either does not ask about the personality of the first person, or, if he does, the barest minimum of brief, vague, and superficial responses are offered by the first person.

Level 3

The first person volunteers personal information about himself which may be in keeping with the second person's interests, but this information is often vague and indicates little about the unique character of the first person.

Example.--While the first person volunteers personal information and never gives the impression that he does not wish to disclose more about himself, nevertheless, the content of his verbalizations is generally centered upon his reactions to the second person(s) and his ideas concerning their interaction.

In summary, the first person may introduce more abstract, personal ideas in accord with the second person's interests, but these ideas do not stamp him as a unique person. Level 3 constitutes the minimum level of facilitative interpersonal functioning.

Level 4

The facilitator freely volunteers information about his personal ideas, attitudes, and experiences in accord with the second person's interests and concerns.

Example.--The facilitator may discuss personal ideas in both depth and detail, and his expressions reveal him to be a unique individual.

In summary, the facilitator is free and spontaneous in volunteering personal information about himself, and in so doing may reveal in a constructive fashion quite intimate material about his own feelings and beliefs.

Level 5

The facilitator volunteers very intimate and often detailed material about his own personality, and in keeping with the second person's needs may express information that might be extremely embarrassing under different circumstances or if revealed by the second person to an outsider.

Example.--The facilitator gives the impression of holding nothing back and of disclosing his feelings and ideas fully and completely to the second person(s). If some of his feelings are negative concerning the second person(s), the facilitator employs them constructively as a basis for an open-ended inquiry.

In summary, the facilitator is operating in a constructive fashion at the most intimate levels of self-disclosure.

Personally Relevant Concreteness or Specificity of Expression in Interpersonal Processes: A Scale for Measurement

Level 1

The first person leads or allows all discussion with the second person(s) to deal only with vague and anonymous generalities.

Example.--The first person and the second person discuss everything on strictly an abstract and highly intellectual level.

In summary, the first person makes no attempt to lead the discussion into the realm of personally relevant specific situations and feelings.

Level 2

The first person frequently leads or allows even discussions of material personally relevant to the second person(s) to be dealt with on a vague and abstract level.

Example.--The first person and the second person may discuss the "real" feelings but they do so at an abstract, intellectualized level.

In summary, the first person does not elicit discussion of most personally revelant feelings and experiences in specific and concrete terms.

Level 3

The first person at times enables the second person(s) to discuss personally relevant material in specific and concrete terminology.

Example.--The first person will make it possible for the discussion with the second person(s) to center directly around most things that are personally important to the second person(s), although there will continue to be areas not dealt with concretely and areas in which the second person does not develop fully in specificity.

In summary, the first person sometimes guides the discussions into consideration of personally relevant specific and concrete instances, but these are not always fully developed. Level 3 constitutes the minimal level of facilitative functioning.

Level 4

The facilitator is frequently helpful in enabling the second person(s) to fully develop in concrete and specific terms almost all instances of concern.

Example.--The facilitator is able on many occasions to guide the discussion to specific feelings and experiences of personally meaningful material.

In summary, the facilitator is very helpful in enabling the discussion to center around specific and concrete instances of most important and personally relevant feelings and experiences.

Level 5

The facilitator is always helpful in guiding the discussion, so that the second person(s) may discuss fluently, directly, and completely specific feelings and experiences.

Example.--The first person involves the second person in discussion of specific feelings, situations, and events, regardless of their emotional content.

In summary, the facilitator facilitates a direct expression of all personally relevant feelings and experiences in concrete and specific terms.

APPENDIX B

INSTRUCTIONS

This inventory comprises three parts: (1) a RATING GRID, (2) an OVERLAY SHEET, and (3) this set of instructions. This inventory is designed to help the experimenter understand the way people think about people who have played a part in their lives.

1. Start with the OVERLAY SHEET. Beginning with your own name, write the first names of the persons described. Write their names in the blanks provided. If you cannot remember a person's name, write his last name or something about him which will clearly bring to your mind the person's identity. DO NOT USE ANY NAME MORE THAN ONCE. You may keep this OVERLAY SHEET. The experimenter will be interested only in what you write on the RATING GRID.

2. Next, lay the OVERLAY SHEET sidewise across the top of the RATING GRID so that the numbered blanks correspond to the numbered columns in the GRID where the brief descriptions of the persons are listed.

3. Now move the OVERLAY SHEET down on the RATING GRID until it is just above the first row of squares. Note that out to the side of the first row of squares is a scale or dimension labeled outgoing-shy. The six numbers along the top of the words refer to the six points along this scale. +3 indicates very outgoing; +2 indicates moderately outgoing; +1 indicates slightly outgoing; -1 indicates slightly shy; -2 indicates moderately shy; and -3 indicates very shy.

4. Now, rate each of the ten people you have listed in the blanks of the OVERLAY SHEET on this scale. Place one of the six numbers in the square under each name. For example, if you rate the person you have placed in column 2 (disliked person) as moderately outgoing, you would place a +2 in the square under his (her) name.

5. Now slide the OVERLAY SHEET down to the second row. Note that out to the side of the second row is a scale labeled adjusted-maladjusted. Rate each of the ten people you have listed along this six point scale by placing numbers in the squares of the second row.

6. Complete the other rows in the way you have done the first two rows. When you have finished, place the instruction sheet and the RATING GRID in the envelope. You may keep or destroy the OVERLAY SHEET.

OVERLAY SHEET

1. _____	1. Write your name in the first blank here.
2. _____	2. A person with whom you have been associated and for some reason you dislike.
3. _____	3. Write your mother's name here. If you grew up with a stepmother write her name instead.
4. _____	4. A person whom you would most like to help or for whom you feel sorry.
5. _____	5. Write your father's name here. If you grew up with a stepfather write his name instead.
6. _____	6. Your closest present friend of the same sex as yourself.
7. _____	7. Your wife (or husband) or if you are not married, your closest present girl (boy) friend.
8. _____	8. A person with whom you usually feel most uncomfortable.
9. _____	9. An employer, supervisor, or officer under whom you served during a period of great stress.
10. _____	10. A person whom you find difficult to understand.

RATING GRID

	Brief Description of Columns
Row 1.	1. Yourself
Row 2.	2. Person you dislike
Row 3.	3. Mother
Row 4.	4. Person you'd like to help
Row 5.	5. Father
Row 6.	6. Friend of same sex
Row 7.	7. Friend of opposite sex
Row 8.	8. Person you feel uncomfortable
Row 9.	9. Boss
Row 10.	10. Person difficult to understand

+3	+2	+1	-1	-2	-3
outgoing					shy
adjusted					maladjusted
decisive					indecisive
calm					excitable
interested in others					self-absorbed
cheerful					ill humored
responsible					irresponsible
considerate					inconsiderate
independent					dependent
interesting					dull

+3 +2 +1 -1 -2 -3

APPENDIX C

Enclosed are twelve cards with quotations from various psychologists. Each of these bears a letter in the upper right hand corner. The answer sheet contains twelve rows. On Row I of the answer sheet, letters A, E and C are written in upper case. Select cards A, E and C from the deck and read them. Then,

1. Decide how two of them are alike in some important way that distinguishes them from the third. Use all facts you may know about the author of the quote, in addition to what may be written on the card.

2. When you have made your decision, return to Row I and circle those two letters that you have decided are like one another.

3. Then follow Row I to Column I and briefly state how the two cards are alike. When you have done this move to Column II in Row I.

4. In Column II write the opposite of the idea you created in Column I. This need not be what the third card, which you excluded in 1 above is like.

5. Read the nine cards whose corresponding letters are written in lower case in Row I.

6. Decide which of these are LIKE the construct you created in Column I. Circle them in Row I.

Now move to Row II.

Select the cards corresponding to the letters capitalized in Row II.

Select the cards corresponding to the letters capitalized in Row II. Repeat procedures beginning with 1 above. Repeat this until all twelve rows are completed.

A. First, ...man has an essential nature of his own... (This nature is) good or neutral rather than evil. Second, there is involved the conception that full healthy and normal and desirable development consists in actualizing this nature, in fulfilling these potentialities, and in...growing from within rather than from without. Third, it is now seen clearly that psychopathology in general results from the denial or frustration or the twisting of man's essential nature.

Abraham Maslow

B. ...we believe that the preconscious and unconscious responses of the therapist to the patient are essential elements in the creative process... These cannot be dealt with in a calculated manner... One effort of psychotherapy is to increase the areas of conscious awareness... However, another important aspect of treatment is to make the patient less conscious of some of his experience; that is, to develop his spontaneity sincerity. We describe this entire therapeutic process including both rational and feeling components, as experiential psychotherapy.

Whitaker and Malone

C. ...each individual hysterical symptom immediately and permanently disappeared when we had succeeded in bringing clearly to light the memory of the event by which it was provoked and in arousing its accompanying affect, and when the patient had described that event in the greatest possible detail and had put the affect into words.

Freud

D. Psychology is the study of creative adjustments. Its theme is the ever renewed transition between novelty and routine, resulting in assimilation and growth. Correspondingly, abnormal psychology is the study of the interruption, inhibition, or other accidents in the course of creative adjustment. We...consider anxiety, the pervasive factor in neurosis, as a result of the interruption of the excitement of creative growth... (We consider) the various neurotic "characters" as stereotyped patterns limiting the flexible process of creatively addressing the novel...

Frederick Perls

E. The rational-emotive therapist does not merely demonstrate to his patient that he is indoctrinating himself with silly premises and is acting on these groundless suppositions. He also does his best to convince this patient that he must fight, in practice as well as in theory, against his self-indoctrinations and the poor behavior patterns to which they are continually leading him... (The therapist must induce) the patient to undo as well as unthink his self-defeating indoctrinations.

Albert Ellis

F. ...fundamental psychotherapeutic effects follow reciprocal inhibition of the neurotic responses... The patient is given preliminary training in relaxation... Meanwhile an "anxiety hierarchy" is constructed. This is a list of stimuli to which the patient reacts with unadaptive anxiety. The items are ranked according to the amount of

disturbance they cause... The patient is...made to relax as deeply as possible. Then he is told to imagine the weakest item on the anxiety heirarchy... The "dosage" is gradually increased...until at last the phobic stimulus can be presented at maximum intensity without impairing the calm, relaxed state.

Wolpe

G. I began to see clearly in every psychological phenomenon the striving for superiority... All our functions follow its direction. They strive for conquest, security, increase, either in the right or wrong direction... The urge from below to above never ceases... --self-preservation, pleasure principle, equalization--all these are but vague representations, attempts to express the great upward drive.

Adler

H. ...psychiatry has to be defined as the study of interpersonal relations... From such a standpoint, personality is taken to be hypothetical. That which can be studied is the pattern of processes which characterize the interaction of personalities in particular recurrent situations or fields which "include" the observer...any one participant observer can study but a finite number of these situations or fields.

Sullivan

I. The end point of personality development (is) a basic congruence between the phenomenal field of experience and the conceptual structure of the self--a situation which, if achieved, would represent freedom

from potential strain; which would represent the maximum of realistically oriented adaptation; which would mean the establishment of an individualized value system having considerable identity with the value system of any other equally well adjusted member of the human race.

Carl Rogers

J. Yourself

K. The great problems of life are always related to the primordial images of the collective unconscious. These images are really balancing or compensating factors which correspond with the problems which life presents in actuality... These images are deposits representing the accumulated experience of thousands of years... Every great experience in life, every profound conflict, evokes the treasured wealth of these images and brings them to inner perception... They become accessible to consciousness only in the presence of that degree of self-awareness...which enables a man also to think what he experiences instead of just living it blindly.

Carl Jung

L. ...there is only one thing wrong with neurotic patients: the lack of full and repeated sexual satisfaction...psychoanalysis knew only of an ejaculative and erective potency. But without the inclusion of the economic, experiential and energy aspects, the concept of sexual potency has no meaning at all. Erective and ejaculative

potency are nothing but indispensable prerequisites for orgastic potency. Not a single neurotic individual posesses orgastic potency; the corollary of this fact is the fact that the vast majority of humans suffer from a character neurosis.

Wilhelm Reich

A	B	C	D	E	F	G	H	I	J	K	L	
MA	WH	FR	PE	EL	WO	AD	SU	RO	SE	JU	RE	
A	1	A	1	A	1	1	1	1	1	1	1	1
2	2	2	2	2	B	B	B	2	2	2	2	2
3	3	C	3	3	C	3	3	C	3	3	3	3
4	D	4	4	4	4	D	4	4	D	4	4	4
5	5	5	5	5	5	5	E	5	E	5	E	5
F	F	6	6	6	6	6	6	6	6	6	F	6
7	7	G	7	7	7	7	7	7	G	G	7	7
8	8	8	8	H	H	8	8	8	8	H	8	8
I	9	9	9	9	9	9	9	I	9	I	9	9
10	10	10	J	J	10	10	10	J	10	10	10	10
11	K	11	K	11	11	11	K	11	11	11	11	11
12	12	12	L	12	12	12	L	12	12	12	L	12

APPENDIX D

I. Centers of Cluster Across Subjects at Time I

S U B J E C T	M A S L O W R	I A T K E U D	F A R E L I S	P E L L I E R	E L O V E R N	W A L K E R S	A L O N E F	S U L L E N	L R O R I G H	F M	T R I
1a	0	0	0	0	0	X	X	0	X	31	16
b	X	X	X	X	X	0	0	X	X		
c	X	X	X	X	X	X	0	0	0		
2a	0	X	X	0	X	X	0	0	0	45	30
b	0	X	X	0	X	X	0	0	0		
3a	0	0	X	0	X	X	X	0	0	55	30
b	X	X	0	X	0	0	0	0	X		
c	X	X	0	X	0	0	0	0	X		
4a	0	0	0	0	0	0	0	0	0	43	30
b	X	0	0	X	0	0	0	0	0		
c	X	0	0	X	0	0	0	0	0		
5a	0	0	X	0	X	X	X	0	X	53	24
b	X	0	0	0	0	0	X	0	X		
c	0	X	0	0	X	X	X	0	X		
d	X	0	X	X	0	0	0	X	0		
6	X	X	X	X	X	0	0	X	X	62	40
7	X	X	0	X	X	0	0	0	X	89	66
8	0	0	0	0	0	0	0	0	0	85	48
9	X	X	0	X	0	0	0	X	X	84	48
10	X	X	0	X	X	0	0	0	X	44	24
11a	X	X	X	0	0	0	X	0	0	46	36
b	0	0	0	X	X	X	0	X	X		
c	X	X	X	0	0	0	X	0	0		
d	0	0	0	X	0	X	0	X	X		
e	0	0	0	X	0	X	0	X	X		
12a	X	X	0	X	X	0	0	X	X	89	66
b	0	0	X	0	X	X	X	0	0		
c	X	X	0	X	0	0	0	X	X		
d	X	X	0	X	0	0	0	X	X		
13	0	0	0	0	0	0	0	0	0	23	18
14	0	0	X	0	X	X	X	0	0	73	38

II. Centers of Cluster Across Subjects at Time II

Subject	Whisker	Tafferel	Sulker	Weeder	Loiterer	Sulker	Jeerer	Recruiter	F Matrix	T Matrix
1a	X	X	0	X	X	0	X	X	X	X	X	0	42	28
b	0	X	X	0	X	X	0	0	0	0	0	X		
c	X	X	0	X	X	X	0	X	X	X	X	0		
2	X	X	0	X	X	X	X	X	X	X	0	X	54	26
3	0	0	0	0	0	0	0	X	0	0	0	0	43	30
4	X	X	0	X	0	0	X	X	X	X	X	0	74	32
5a	0	0	0	0	0	0	0	X	X	X	0	0	42	24
b	X	0	0	0	0	0	0	0	X	X	0	0		
6a	X	X	0	X	X	0	X	0	X	X	0	0	42	22
b	0	0	X	0	0	X	0	X	0	0	0	X		
7	X	X	0	X	X	0	X	0	X	X	0	0	44	24
8	0	0	X	0	0	X	X	X	0	0	X	X	64	30
9a	X	0	0	X	0	0	X	0	X	X	0	0	55	32
b	X	0	0	X	0	0	0	0	X	X	0	0		
10a	0	0	0	0	0	0	0	0	0	0	0	0	32	20
b	X	X	X	X	X	X	0	0	0	0	0	0		
c	0	0	0	0	0	0	0	0	0	0	0	0		
d	0	0	0	0	0	0	0	0	0	0	0	0		
11a	X	X	X	0	X	0	X	X	X	0	X	X	63	46
b	X	X	X	0	X	0	X	X	X	0	X	X		
c	X	X	X	0	X	0	X	X	X	0	X	X		
12	X	X	X	X	0	0	X	X	X	0	X	X	42	28
13	0	0	0	0	0	0	0	0	X	0	X	0	23	18
14a	0	X	0	0	0	X	0	X	0	0	0	0	40	18
b	X	0	X	X	0	0	X	0	X	0	X	X		

III. First Factor Theorists Across Subjects at Time I

S U B J E C T	M A S L O W R	W H I T A K E R	F A R E U D	P E L L I S	E L O P E R	W O L L E N	A D L E R	S U L L I V A N	L O I S	R O G E R S	S E U F	J L N G	R E I C H
1	0	X	X	0	X	X	X	X	0	0	X	X	
2	X	X	0	X	X	X	X	X	X	X	0	X	
3	0	X	0	0	0	0	0	0	0	X	0	0	
4	X	X	0	X	0	0	X	X	X	X	X	0	
5	X	0	0	0	0	0	0	0	X	X	0	0	
6	0	0	X	0	0	X	0	X	0	0	X	X	
7	0	0	X	0	0	X	X	X	0	0	X	X	
8	X	X	0	X	0	0	0	0	X	X	0	0	
9a	X	0	0	X	0	0	0	0	X	X	0	0	
b	X	0	0	X	0	0	0	0	X	X	0	0	
10	X	X	0	X	0	0	0	0	X	0	0	0	
11a	X	X	X	0	X	0	X	X	X	0	X	X	
b	X	X	X	0	X	0	X	X	X	0	X	X	
c	X	X	X	0	X	0	X	X	X	0	X	X	
12	0	0	0	0	0	X	0	0	0	0	0	0	
13a	X	X	X	0	X	0	X	X	X	0	X	X	
b	0	X	X	X	X	X	0	0	0	0	0	0	
14a	0	X	0	0	0	X	0	X	0	0	0	0	
b	0	X	X	0	0	X	0	X	0	X	0	0	
c	0	X	X	0	0	X	0	X	0	X	0	0	
d	0	X	X	0	0	X	0	X	0	X	0	0	
e	X	0	X	0	0	0	0	0	0	0	X	0	
f	X	0	X	0	0	0	0	0	0	X	0	0	

IV. First Factor Theorists Across Subjects at Time II

S U B J E C T	M A S L O W	W H I T A K E R	F A R E U D	P E R L S	E L O I P E	W O D L E R	A L I V E N	S U L R O G E A R S	S J E U L F	R E I N C H
1a	X	0	0	0	0	0	0	0	X	0	0
b	X	0	0	0	0	0	0	0	X	0	0
2a	0	X	X	0	X	X	0	0	0	0	0
b	0	X	X	0	X	X	0	0	0	0	0
3	X	X	0	X	0	0	0	0	X	X	0
4	X	0	0	X	0	0	0	0	0	0	0
5	X	0	X	X	0	0	0	X	0	X	X
6a	X	X	X	X	X	0	0	0	X	X	0
b	X	X	X	X	X	0	0	0	X	X	0
c	X	X	X	X	X	0	0	0	X	X	0
7	0	X	0	X	X	0	0	0	X	X	0
8	0	0	0	0	0	0	0	0	0	0	0
9	X	X	0	X	X	0	X	0	X	X	0
10	X	X	0	X	X	0	0	0	X	X	0
11a	X	X	X	0	0	0	X	0	0	0	X
b	0	0	0	X	X	X	0	X	X	X	0
c	X	X	X	0	0	0	X	0	0	0	X
12a	0	0	X	0	X	X	X	0	0	0	X
b	X	X	0	X	0	0	0	X	X	X	0
13a	0	X	X	0	0	X	X	X	X	X	0
b	0	X	0	0	0	0	X	X	X	0	0
c	X	0	0	X	0	0	X	0	0	X	X
d	0	0	0	0	0	0	0	0	0	X	0
14	0	0	X	0	X	X	X	0	0	0	X

V. Second Factor Theorists Across Subjects at Time I

Subject	Mask	Wish	Tact	Fake	Perk	Elude	Wail	Alone	Solid	Loud	Sure	Glee	Jest	Rule
	M	W	A	F	P	E	W	A	S	L	S	G	J	R
	A	I	T	A	E	L	O	D	U	O	E	E	U	E
	S	H	S	K	R	L	L	L	L	U	V	S	I	I
	L		L	E	E	L	I	P	E	R	E	F	N	C
	O		O	R	U	L	I	S	E	R	N	S	G	H
	W		W	R	D	S	S	E	R	X	A	R	L	N
1a	X		0	0	0	0	0	0	0	0	0	X	0	0
b	X		0	0	0	0	0	0	0	0	0	X	0	0
2a	0		X	X	0	X	X	0	0	0	0	0	0	0
b	0		X	X	0	X	X	0	0	0	0	0	0	0
3	X		X	0	X	0	0	0	0	X	X	0	0	0
4	X		0	0	X	0	0	0	0	0	0	0	0	0
5	X		0	X	X	0	0	0	X	0	X	X	0	0
6a	X		X	X	X	X	0	0	0	X	X	0	0	0
b	X		X	X	X	X	0	0	0	X	X	0	0	0
c	X		X	X	X	X	0	0	0	X	X	0	0	0
7	0		X	0	X	X	0	0	0	X	X	0	0	0
8	0		0	0	0	0	0	0	0	0	0	0	0	0
9	X		X	0	X	X	0	X	0	X	X	0	0	0
10	X		X	0	X	X	0	0	0	X	X	0	0	0
11a	X		X	X	0	0	0	X	0	0	0	X	X	
b	0		0	0	X	X	X	0	X	X	X	0	0	
c	X		X	X	0	0	0	X	0	0	0	X	X	
12a	0		0	X	0	X	X	X	0	0	0	X	X	
b	X		X	0	X	0	0	0	X	X	X	0	0	
13a	0		X	X	0	0	X	X	X	X	X	0	0	
b	0		X	0	0	0	0	X	X	X	0	0	0	
c	X		0	0	X	0	0	X	0	0	X	X	0	
d	0		0	0	0	0	0	0	0	0	X	0	0	
14	0		0	X	0	X	X	X	0	0	0	X	X	

VI. Second Factor Theorists Across Subjects at Time II

SUBJECT	MASKED	WHITE AREA	FACE	EYES	WALL	ADIRONDACKS	ALVIN	SOUL	LORE	IGNORANCE	SUBJECT	REACTION
1a	0	X	0	0	0	0	X	X	X	0	0	0
b	X	X	0	0	0	0	0	X	X	X	0	0
2a	0	X	0	0	0	0	0	0	X	0	0	0
b	X	0	0	X	0	0	0	0	X	0	0	0
3	0	0	X	0	X	0	0	0	0	0	X	0
4a	X	0	0	X	X	0	0	0	0	X	0	0
b	0	0	0	0	0	0	X	X	0	X	0	0
c	0	X	0	0	0	0	0	0	X	X	0	0
d	0	0	X	0	0	0	0	0	0	0	X	0
e	X	0	0	0	0	0	X	0	0	0	X	X
5a	0	X	X	0	X	X	0	0	0	0	0	0
b	0	X	X	0	X	X	0	0	0	0	0	0
6a	0	0	0	X	X	X	0	X	X	X	0	X
b	X	X	X	0	0	0	X	0	0	0	X	0
7a	0	0	X	0	0	0	X	0	0	0	0	X
b	X	X	0	X	0	0	X	X	X	X	X	0
c	0	X	X	0	X	X	0	0	0	X	0	0
d	0	0	X	0	0	0	X	0	0	0	X	X
e	X	0	X	X	X	0	X	0	X	X	0	X
f	X	X	X	X	X	X	0	0	X	X	0	X
8a	0	0	0	0	0	0	0	0	0	X	0	X
b	0	0	0	X	0	0	0	0	0	X	0	X
9	0	0	0	0	X	X	0	0	0	0	0	0
10a	0	0	X	0	0	0	0	X	0	0	X	0
b	0	0	X	0	0	0	0	X	0	0	X	0
c	0	0	X	0	0	0	0	X	0	0	0	0
d	X	X	0	X	0	0	0	X	0	0	X	0
e	0	X	0	0	X	X	0	X	0	0	0	0
f	0	0	X	0	0	0	X	X	0	0	0	0

TABLE VI - continued

SUBJECT	MASTER	WHITE	TARE	PERL	ELL	WOLF	ALDI	SULVER	LOGAN	RUSS	JUNE	RICH
11a	0	X	0	X	0	0	0	0	0	0	0	X
b	X	0	X	0	X	X	X	X	X	X	X	0
c	0	X	0	X	0	0	0	0	0	0	0	X
12	X	0	0	X	0	0	0	0	X	0	0	0
13a	0	0	0	0	0	0	X	X	0	X	0	0
b	0	0	0	0	0	0	X	X	0	X	0	0
c	0	0	0	0	0	0	X	X	X	X	0	0
d	X	X	0	0	0	0	0	X	X	0	0	0
14a	X	X	0	0	X	0	0	0	X	X	0	0
b	0	0	0	0	X	0	0	0	X	0	0	0
c	0	0	0	0	X	0	0	0	X	0	0	0
d	X	0	0	X	0	0	0	0	X	0	0	0
e	X	X	X	X	0	0	0	0	X	X	0	0
f	0	0	X	X	0	X	X	X	0	0	X	X

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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Harry A. Grater, Jr., Chairman
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